CLAIMS

What is claimed as new and desired to be protected by Letters Patent , as set forth in the appended claims is:

1. An electric fish barrier in a body of water having a surface and a bottom, said fish barrier comprising:

a) a water intake for diverting water from the body of water of water to a new location, the water intake being disposed within said body of water;

an electrical source for generating a voltage potential between a first terminal and a second terminal;

b) a first plurality of electrode structures respectively comprising a primary electrically conductive member disposed in said body of water, said primary conductive members being in electrical continuity with said first terminal of said electrical source; and

c) a second plurality of electrode structures respectively comprising a complementary electrically conductive member disposed in said body of water, said complementary conductive members being in electrical continuity with said second terminal of said electrical source, a voltage gradient being formed within said body of water between said primary elongated conductive members and said complementary elongated conductive members form .

2. The electric fish barrier according to claim 1 wherein said voltage gradient includes a minimum contiguous gradient throughout an effective barrier zone.

3. The electric fish barrier of claim 1 further comprising an attraction flow of water flowing toward said water intake, wherein a portion of said attraction flow of water flows through said effective barrier zone, said attraction flow being sensible to a fish and oriented according to a flow axis.

4. The electric fish barrier of claim 3 wherein said effective gradient comprises an equipotential voltage plane that is substantially perpendicular to said flow axis.

5. The electric fish barrier of claim 2 wherein said first plurality of electrode structures are oriented along a first line.

6. The electric fish barrier of claim 5 wherein said second plurality of electrodes are oriented along a second line that is substantially parallel said first line.

7. The electric fish barrier of claim 2 wherein some of said first plurality of electrode structures are oriented along a first curved path.

8. The electric fish barrier of claim 7 wherein some said second plurality of electrode structures are oriented along a second curved path conforming substantially in shape to said first curved path.

9. The electric fish barrier according to claim 2 wherein an electrically conductive member has a first end at a first depth and a second end at a second depth greater than the first depth.

10. The electric fish barrier according to claim 9 wherein second depth is less than a bottom depth of said body of water.

11. The electric fish barrier according to claim 9 wherein said first depth is beneath the surface of said body of water.

12. The electric fish barrier according to claim 9 wherein each electrode structure comprises a support pile.

13. The electric fish barrier according to claim 12 wherein the support pile includes a conductive structural member.

14. The electric fish barrier according to claim 13 wherein the conductive structural member is an outer support pipe is filled with concrete.

15. The electric fish barrier according to claim 12 wherein said electrically conductive member is supported by said support pile.

16. The electric fish barrier according to claim 15 further comprising an insulating member to insulate said electrically conductive member from said support pile, said support pile comprising an electrically conductive structural member.

17. The electric fish barrier according to claim 15 wherein the support pile has an electrically conductive structural member in electrical continuity with said electrically conductive member.

18. The electric fish barrier according to claim 13 wherein said conductive member is formed from an exposed region of said conductive structural member.

19. The electric fish barrier of claim 18 wherein said conductive structural member is supported by an insulative concrete foundation.

20. The electric fish barrier according to claim 12 wherein each pile has an upper end terminating proximate said surface of said body of water.

21. The electric fish barrier according to claim 20 wherein the body of water is a reservoir is formed by a dam, the fish barrier further comprising a structural brace secured to the dam, and wherein an upper end of each pile is secured to the structural

brace.

22. An improved electric fish barrier for deterring fish from entering a water intake in a body of water, wherein water flowing into the intake forms an attraction flow for fish, the improved electric fish barrier comprising a first plurality of conductive members at a first voltage potential and a second plurality of conductive members at a second voltage potential, thereby forming a contiguous effective voltage gradient along an axis of said attraction flow, and wherein a portion of said attraction flow passes through said contiguous effective voltage gradient.

23. The improved electric fish barrier of claim 22 wherein said body of water has a bottom and a surface, wherein said contiguous effective voltage gradient does not extend from said bottom to said surface.

24. The improved electric fish barrier according to claim 22 wherein said body of water has a bottom, and wherein each conductive member has a lower end and an upper end, wherein a lower end of a conductive member is disposed a predetermined distance from said bottom of said body of water.

25. The improved electric fish barrier of claim 22 wherein a conductive member is formed by a conductive sheath, said conductive sheath being supported by a support pile and electrically insulated from said support pile.

26. The improved electric fish barrier of claim 22, the body of water having a bottom, the fish barrier comprising support piles supported by an electrically insulative foundation on a bottom of said body of water, a conductive member of said first plurality of conductive members being formed by an exposed metal surface of said support pile.